



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
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Seattle, WA 98115

Refer to:  
2003/00490

July 22, 2003

Mr. Lawrence Evans  
Department of the Army  
ATTN: Mr. Mark Everett  
Portland District, Corps of Engineers  
P.O. Box 2946  
Portland, OR 97208-2946

Re: Endangered Species Act Formal Section 7 Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Northgate Avenue Extension and Claggett Creek Realignment, City of Salem, Oregon (Corps No. 200200923)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act that addresses the proposed extension of Northgate Avenue and realignment of Claggett Creek in the City of Salem, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize Upper Willamette River (UWR) chinook salmon (*Onchorynchus tshawytscha*) or UWR steelhead (*O. mykiss*). This Opinion includes reasonable and prudent measures with terms and conditions that are necessary and appropriate to minimize the potential for incidental take associated with this project.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600. The Willamette River and tributaries have been designated as EFH for chinook salmon.

If you have any questions regarding this consultation please contact Ben Meyer of my staff in the Oregon Habitat Branch, at 503.230.5425.

Sincerely,

*Michael R. Crouse*

D. Robert Lohn  
Regional Administrator



# Endangered Species Act - Section 7 Consultation Biological Opinion

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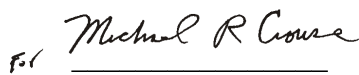
## Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation

Northgate Avenue Extension and Claggett Creek Realignment Project,  
City of Salem, Oregon

Agency: U.S. Army Corps of Engineers

Consultation  
Conducted By: NOAA's National Marine Fisheries Service,  
Northwest Region

Date Issued: July 22, 2003

Issued by:   
D. Robert Lohn  
Regional Administrator

Refer to: 2003/00490

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## **1. INTRODUCTION**

### **1.1 Consultation History**

On May 1, 2003, NOAA's National Marine Fisheries Service (NOAA Fisheries) received a letter from the Corps of Engineers (COE) requesting informal Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act (MSA) consultation on the effects of the proposed Northgate Avenue Extension and Claggett Creek Realignment on Upper Willamette River (UWR) chinook salmon (*Oncorhynchus tshawytscha*) and UWR steelhead (*O. mykiss*). The COE determined in the accompanying biological assessment (BA) that the proposed action is "not likely to adversely affect" (NLAA) UWR chinook salmon or UWR steelhead. On June 10, 2003, NOAA Fisheries received two additional documents (Northgate Avenue Extension Conceptual Mitigation Plan, dated May 2003, and a hydraulic report for the project dated March 5, 2003). NOAA Fisheries responded with a letter dated July 2, 2003, indicating that NOAA Fisheries did not concur with the finding of NLAA and would need further information to begin formal consultation. NOAA Fisheries' nonconcurrence was based on the potential for stranding and mortality of juvenile UWR chinook salmon in Claggett Creek during project implementation and operation, and the lack of sufficient information regarding design details of the reconstructed channel and stormwater treatment on site. The COE, applicants (City of Salem) and NOAA Fisheries met on July 2, 2003 to discuss these issues and provide additional information to begin formal consultation.

NOAA Fisheries listed UWR chinook salmon as threatened under the ESA on March 24, 1999 (64 FR 14308) and UWR steelhead on March 25, 1999 (64 FR 14517). NOAA Fisheries issued protective regulations for UWR chinook salmon and UWR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422).

The objective of this Opinion is to determine whether implementing the proposed project is likely to jeopardize the continued existence of UWR chinook salmon or UWR steelhead. The objective of the EFH consultation is to determine whether the proposed action may adversely affect designated EFH for chinook salmon, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

### **1.2 Proposed Action**

The proposed project is comprised of the extension of Northgate Avenue from Portland Road to Salem Industrial Drive, and the City of Salem Park Project. Wetland mitigation and stream habitat enhancement for these projects will be conducted in and along Claggett Creek and its floodplain, as compensation for project impacts. The whole area would then be developed into a city park.

The Claggett Creek watershed is in northeast Salem and Keizer, Oregon. The project site lies at about river mile (RM) 4.0 on the Claggett Creek, upstream of its confluence with the Willamette River. The majority of the watershed is occupied by urban land uses, and much of the upper creek from State Street upstream of Silverton Road is piped. Claggett Creek begins in the Oak Park neighborhood of Salem, about 3.5 miles upstream of the project site. This upper reach flows through urban residential lands, including numerous road culverts and piped sections. A channelized drainage contains the creek for about one-quarter mile through the site and for about another two miles downstream of the site to the River Road crossing. Downstream of the River Road crossing, the creek flows through agricultural areas and inundated wetlands for about two miles to its mouth at an old Willamette River oxbow named Clear Lake. Labish Ditch converges with Claggett Creek in this reach. The flow passes through Clear Lake and wetland channels for about two miles before discharging to the Windsor Island Slough along the Willamette River at about RM 75.5.

The lower watershed is relatively flat in grade and water tends to move slowly through the creek system. The creek experiences conditions typically associated with heavily urbanized environments, such as altered hydrology due to increased impervious surfaces and culverting, degraded water quality, and habitat fragmentation and degradation.

The following is a summary of the proposed action taken from the October 2002 biological assessment (BA) provided by the City of Salem as part of the consultation process.

There is currently no connection between Portland Road and Salem Industrial Drive, which is the only roadway accessing the Salem Industrial Park. Exacerbating this inefficient road configuration, the existing at-grade Burlington Northern Santa Fe (BNSF) Railroad crossing of Salem Industrial Drive effectively blocks the ingress and egress of the entire industrial area. The proposed connection of Portland Road and Salem Industrial Drive via a western extension of Northgate Avenue is included in the City's transportation plan.

The Northgate Avenue extension will cross over an existing set of railroad tracks owned by the Union Pacific Railroad (UPRR). The proposed overpass will be approximately 50 feet above the natural ground surface, providing sufficient clearance for train traffic. Northgate Avenue is classified as a collector road and the extension will consist of two 12-foot travel lanes, 5-foot bike lanes, and 5-foot sidewalks. A loop has been incorporated into the roadway design to lengthen the approach to Salem Industrial Drive, and in turn decrease the slope of the road grade as required to accommodate the anticipated truck traffic in and out of the industrial area.

Estimated excavation quantities in waterways and wetlands is approximately 12,100 cubic yards; fill is approximately 75,400 cubic yards. To construct the road, unsuitable soils will be excavated and replaced with structural material suitable for the road foundation. Excavated topsoil will be spread on the creek bench in the area of wetland mitigation. The road fill will be comprised of imported or on-site clean soils, rock, or other suitable material. Unsuitable material will be appropriately disposed of in an upland location. Staging for the road construction will be interior to the road loop, an area that will be impacted by park construction.

Wetlands that will not be impacted by the project will be separated from the staging area by construction fencing to prevent incidental impacts.

An existing recent surface water connection between Claggett Creek and the inundated gravel pit to the east of the project site will be culverted to facilitate the crossing of a proposed 15-foot wide road designed to access the adjoining property.

No substantial woody vegetation exists on the site, as the southeast portion of the site (the only forested area) was logged just a few years ago. Therefore, no impacts to forest areas will occur. There is an opportunity to salvage immature native willows, ash, and rose from the wetland impact areas for use in revegetating the wetland bench, buffer, and upland terrace areas, and realigned channel.

The purpose of the Claggett Creek Park is to create a large, multi-use park that would serve the entire city. The new park will fulfill the need for more park acreage, more open space and natural area, and will be in an area of the city that is particularly under-served by the current park system.

Future park facilities will include a natural area, baseball and soccer fields, trails, covered park facility, and parking area for approximately 200 vehicles (Figure 3). The park facilities will involve approximately 1,400 cubic yards of wetland fill and will impact approximately 0.19 acres (8,243 square feet) of jurisdictional wetlands/waters of this state. Grading for the park facilities will occur simultaneously with the road construction and mitigation area construction. The proposed trails will be 8 feet wide and composed of wood chips, or other pervious surface, or in some instances boardwalk type structures. The excavation or fill for the approximately 27,800 square feet of trail (approximately 3,475 linear feet) will be accomplished to balance the amount of earth to be moved. At various vantage points, interpretive viewpoints will be developed along the trail. These viewpoints will be structures elevated above the ground plane to provide educational information about the floodplain, wetlands, restoration/ mitigation efforts, wildlife, and historical use such as mining operations. The trail parallels Claggett Creek and in two places travels through wetland areas. The paths are above the high flow channel and outside the proposed 50-foot wetland buffer, with the exception of the interpretive viewpoints.

The project will create a total of 8.48 acres (368,953 square feet) of new impervious surface including 6.09 acres (265,363 square feet) of road surface and 2.38 acres (103,673 square feet) in the park structure and parking lot footprints.

Stormwater runoff will be treated during a precipitation event up to one-third of the 2-year storm. Runoff from 6.09 acres of impervious road surface will be treated by one of two proprietary treatment devices during the water quality storm. These types of treatment facilities are expected to remove 70% of total suspended solids (TSS) (per the manufacturer's specifications), oil and grease.

The stormwater draining off approximately 6.88 acres of impervious surface, up to the 50-year storm event, will be released at the 10-year storm event flow rate per the City of Salem standards. Runoff from the remaining 1.60 acres of proposed impervious surface will be discharged to the existing City of Salem storm system after treatment. This water will not be detained, but any impacts will be offset by the proposed 33,000 cubic yard increase in Claggett Creek floodplain capacity. The existing storm sewer pipe currently draining the existing developed Salem Industrial Drive area will be modified to discharge to the new creek channel via a turf reinforcement mat (TRM)-lined ditch to prevent erosion. The pipe outfall will have a riprap energy dissipation pad.

The overall project will result in excavation of approximately 101,000 cubic yards of excavation and about 285,000 cubic yards of fill. This activity will include filling 2.43 acres (75,400 cubic yards) within wetlands and the existing stream channel, and 12,100 cubic yards of excavation within wetlands and the existing stream channel.

Mitigation for the park and road improvements will be accomplished by relocating the creek channel to a more natural meandering configuration and creating/enhancing adjacent fringing benched wetlands. The mitigation will provide additional flood storage capacity, mimic natural stream morphology, and increase wildlife habitat and diversity.

Approximately 2,440 feet of Claggett Creek will be realigned in a meandering configuration 2,700 feet in length, which will include adjacent fringing wetlands and upland buffers. An entirely new channel will be constructed to the west of the existing channel. "Plugs" of intact earth will be left at each end of the new channel segment during construction to isolate construction impacts from the stream flow. The new channel will be stabilized with erosion control fabric and seeding. After completion, the downstream plug will be removed first, and then the upstream plug, to release Claggett Creek into the new channel. In-water excavation, grading, and streambank stabilization will take place during the Oregon Department of Fish and Wildlife designated instream work window (July 1 to September 30), concurrently with or before wetland impacts and road construction. Mitigation construction will likely occur during the summer of 2003.

Planting of native trees, shrubs and herbaceous species throughout wetland and buffer mitigation areas will take place in the fall of 2003 and/or spring of 2004. A buffer, with an average width of 50 feet, will parallel the high bench of the realigned creek. The mitigation site will be maintained and monitored by the City of Salem.

The surrounding wetlands will not be de-watered by excavation required for construction of the new creek channel and adjacent wetland bench due to the presence of highly impermeable Bashaw clay soils within the project area, which serve to perch the surface water in this low-lying area. Moreover, these remaining on-site wetlands will also be enhanced with native vegetation plantings.

The realigned Claggett Creek will transition back into an existing channelized section approximately 170 feet upstream from the BNSF Railroad trestle near the northeast boundary of the project area. The existing channel from this point to approximately 450 feet downstream from the Salem Parkway Bridge will be cleared of refuse and excavated approximately two feet deep to restore free drainage to this reach. At the existing BNSF Railroad trestle, a 48-inch diameter concrete culvert, intended to convey Claggett Creek during low-flow storm events, will be removed, and the channel at the trestle will be restored to maintain a constant channel slope, consistent with its original configuration.

## **2. ENDANGERED SPECIES ACT**

### **2.1 Biological Opinion**

#### **2.1.1 Biological Information**

The listing status and biological information for UWR chinook salmon are described in Myers *et al.* (1998) and Healey (1991). The listing status and biological information for UWR steelhead are described in Busby *et al.* (1995, 1996). Claggett Creek in the project area may provide habitat for both adult and juvenile life stages of UWR chinook salmon and UWR chinook salmon.

Essential features of the adult spawning, juvenile rearing, and adult and juvenile migratory habitats for the species are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions (65 FR 7764 [February 16, 2000]). The essential features that the proposed project may affect are: Safe passage conditions, substrate, water quality, cover/shelter, space, and riparian vegetation resulting from project activities.

#### **2.1.2 Evaluating Proposed Action**

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps of the consultation regulations combined with the Habitat Approach (NMFS 1999): (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species and whether the action is consistent with the available recovery strategy; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors, is likely to appreciably reduce the likelihood of species survival in the wild or destroy or adversely modify critical habitat. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with cumulative effects, when added to the environmental baseline, is likely to jeopardize the ESA-listed species or result in the destruction or adverse modification of critical habitat. If either or both are found, NOAA



Fisheries will identify reasonable and prudent alternatives for the action that avoid jeopardy or destruction, or adverse modification of critical habitat.

### **2.1.3 Biological Requirements**

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with information considered in its decision to list UWR chinook salmon for ESA protection, then considers new data available that are relevant to the determination.

The relevant biological requirements are those necessary for UWR chinook salmon to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration and juvenile rearing. UWR chinook salmon survival in the wild depends upon the proper functioning of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while removing adverse impacts of current practices. In conducting analyses of habitat-altering actions, NOAA Fisheries defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and applies a "habitat approach" to its analysis. The current status of UWR chinook salmon and steelhead, based upon their risk of extinction, has not significantly improved since the species were listed.

### **2.1.4 Environmental Baseline**

NOAA Fisheries' evaluates the relevance of the environmental baseline in the action area to the species' current status. The environmental baseline is an analysis of the effects of past and ongoing human-caused and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area includes, "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The action area for this consultation includes the project site (41.32 acres) bounded by the Salem Industrial Area to the south, the Union Pacific Railroad culvert on the east, Southern Pacific Railroad track and an inactive gravel mine pond on the west and downstream to the junction of Claggett Creek and Labish Ditch.

As stated in the BA, little water quality information is available for Claggett Creek. Water quality for the middle reach of the Willamette at the mouth of the creek is listed under the Clean

Water Act section 303d as being limited by excessive bacteria, biological criteria (fish skeletal deformities), temperature, and toxics (mercury) (ODEQ 2002). The BA indicates that water temperatures in the on-site portion of Claggett Creek were measured at 70 degrees F on August 10, 2002. The high level of impervious surfaces in the watershed would indicate that other water quality indicators, including chemical concentrations, may also be limiting. The BA indicates that: (1) Stream substrates in the project area are predominantly silt; (2) habitat access is at risk because migration is impeded by numerous culverts both upstream and downstream of the site; (3) large woody debris and pool frequency and quality are well below functioning standards; and, (4) off-channel habitat and refugia have also been nearly eliminated. Claggett Creek has been artificially channelized and floodplain connectivity restricted. The high level of impervious surface in the watershed would indicate that hydrology indicators are degraded. Road density and disturbance history are very intensive.

Fish habitats are enhanced by diversity of conditions at the land-water interface and adjacent bank (USACE 1977). Streamside vegetation provides shade that reduces water temperature and stabilizes streambanks. Overhanging branches provide cover from predators. Insects and other invertebrates that fall from overhanging branches may be preyed upon by fish, or provide food sources for other prey organisms. Immersed vegetation, logs, and root wads provide points of attachment for aquatic prey organisms and shelter from swift currents during high flows, and they retain bed load sediment, create pools, and reduce flow velocity. The lack of these habitat parameters within the project area indicate that the baseline is extremely degraded.

### **2.1.5 Effects of Proposed Action**

UWR chinook salmon and UWR steelhead may be affected by the proposed project due to: (1) Potential for increased sediment/turbidity created by construction activities; (2) possible stranding of juvenile fish in the channelized Claggett Creek from diversion of the stream to the newly created stream channel; (3) dewatering of the downstream reaches during the watering up of the new reach to full saturation; (4) degradation of water quality from stormwater associated with the new road and other future paved facilities; (5) take associated with handling juveniles during isolation of the existing culvert to allow for removal; and (6) beneficial effects resulting from restoration activities.

Construction activities required for the culvert installation, new stream bed construction, park trails and the loop road have the potential to produce sedimentation in Claggett Creek, which could also be conveyed downstream. However, most of the suspended material will settle out of the water column earlier because of the flat gradient and low velocity of the stream. Disturbed areas of bare soil could also be eroded post-construction, introducing turbidity and carrying sediment downstream. The sequencing of construction activities, vegetation of exposed soils and the use of silt fences and other sediment control measures are expected to minimize transport of sediment to the creek.

Stranding of fish in Claggett Creek once the water is diverted to the new channel or for isolation of the existing culvert for replacement is possible. Salvaging stranded fish by a qualified biologist should minimize mortalities.

Potential impacts from new channel construction are unlikely, because it will be dry while stream flow is maintained in the existing channel. Impacts could occur when flow is diverted to the new channel. Partial diversion of water from Claggett Creek until such time as the new streambed is watered up or waiting until there are larger flows should minimize potential downstream dewatering impacts. The new channel should provide for better conditions for fish than the current configuration. This will be especially true once the vegetation proposed for planting along the creek matures. Monitoring of the weirs in the new channel should be conducted to ensure that they are functioning as designed and not creating flow problems.

Stormwater from the new road and park structures would be only partially treated before entering Claggett Creek. The development of urban areas has resulted in a number of documented effects on physical, chemical, biological and ecological properties of streams ecosystems. Of most concern, are the long-term effects on stream hydrology, geomorphology, and water quality. Salmon need cold, clean water and annual and daily hydrologic patterns adequate to support stream geomorphology, and habitat structure and complexity. A summary of the effects can be found in a recent review of the literature from studies in North America and Europe by Paul and Meyer (2001), and more locally in the Pacific Northwest in an article by May *et al.* (1997). This research documents the most consistent and pervasive effect of urbanization is an increase in impervious surface cover, which alters the hydrology and geomorphology of streams, and causes predictable changes in stream habitat and water quality.

Runoff from urban surfaces as well as municipal and industrial discharges result in increased loading of nutrients, bacteria, metals, pesticides, and other toxicants to streams (Porcella and Sorenson 1980, Lenat and Crawford 1994, Latimer and Quinn 1988, USGS 1999a and b). Other observed effects of increased stormwater runoff that affect stream quality are: (1) Increased frequency and severity of flooding; (2) accelerated channel erosion; (3) alteration of streambed substrate size composition; (4) reduced base flow, alteration of energy inputs to streams; and (5) alteration of the natural temperature regime (Klein 1979). These effects are exacerbated by the loss of riparian forests and floodplains. The physical and chemical changes result in declines in healthy microbial and invertebrate communities (Horner *et al.* 1997) and a reduction in fish diversity (Wang *et al.* 1997), including vulnerable cold-water species like salmon.

Changes in the hydrology and geomorphology of streams can affect the hydraulic environment of streams, altering the velocity profiles and hyporheic/parafluvial dynamics of channels. Such changes would affect many ecological processes, from filter-feeding organisms (Hart and Finelli 1999) to carbon processing and nutrient cycling (Jones and Mulholland 2000). Land conversions significantly influence hydrologic processes, increasing the magnitude, frequency and duration of peak discharges and reducing summer base flows (Booth 1991). These changes occur because of a loss of forest cover, and an increase in the impervious surface, and a replacement of the natural drainage system with an artificial network of storm pipes, drainage ditches and roads

(Lucchetti and Fuerstenberg 1993, Booth and Jackson 1997). Roads provide a direct drainage pathway for runoff into the stream system and storm sewer outfalls. Reductions in the natural drainage network and increases in artificial drainage systems shrink the lag time between a rainfall event and the point of peak discharge of stormwater into a stream (Booth and Jackson 1997). This reduction often equates to heightened stormwater peak discharges which cause streambed and streambank scour, mobilize and remove large wood, and extend durations of channel forming flows. This change to the natural hydrology of the stream can have adverse effects on all life stages of salmonids, however, rearing juveniles are particularly vulnerable to being swept downstream during high flows and flows of extended durations.

Nutrients, chemicals and metals are potentially widespread in the environment, and surface and groundwaters may be affected by activities that occur with increased development in a basin. Pesticides are often detected in urban streams at concentrations that frequently exceed guidelines for the protection of aquatic biota (USGS 1999a, Hoffman *et al.* 2000). Sublethal effects such as neurological behavioral effects stemming from standard rates of application of pesticides are a concern. Environmentally-relevant concentrations of diazinon (USGS 1999b) have been shown to disrupt homing and anti-predator behaviors in chinook salmon (Scholtz *et al.* 2000). Other organic contaminants in urban streams include polychlorinated biphenyls (PCB's), polycyclic aromatic hydrocarbons (PAH's), and petroleum-based aliphatic hydrocarbons, all frequently found at levels exceeding human health criteria or at levels stressful to sensitive aquatic organisms (Paul and Meyer 2001).

Natural metal concentrations in surface water vary regionally, however, a common feature of urban streams is elevated water column and sediment metal concentrations, including lead, zinc, chromium, copper, manganese, nickel and cadmium, which increase with increased percentages of urban land use (Wilber and Hunter 1979). In addition to industrial discharges, other sources of metals are brake linings, tires, and metal alloys for engine parts. Although some metals are necessary trace nutrients, many metals are toxic to fish at very low concentrations (Spence *et al.* 1996).

To minimize impacts from poor water quality and excess quantity, water quality treatment facilities should be sized to treat the volume of runoff predicted from a 24-hour storm with a 6-month return frequency (a.k.a., 6-month, 24-hr storm). This will mean the treatment facility will effectively treat 90-95% of the annual runoff. During most rainfall events during the year, 100% of the runoff will be treated. However, during large storm events not all of the runoff will be treated. Therefore, when combined with all other rainfall events, on average, 90-95% treatment is achieved. Calculations to meet this standard should consider all surface area that will contribute runoff to the water quality treatment facility, not just runoff from newly created impervious surface area. The City's use of vegetated biofiltration swales and tree wells in the parking lot associated with the park inside the loop formed by the road would aid in reaching the goal of treating 90-95% of the annual rainfall. The proposed planting of trees and shrubs along both sides of the new road would serve to totally meet that goal.

If any fuel or hydraulic fluid is spilled, it could be carried downstream to fish-bearing waters. The use of sediment curtains where necessary, implementation of a spill response plan, revegetation of disturbed sites, use of permeable surfaces for trails, treatment of stormwater and conducting all in-water construction during the preferred in-water work window (June 1 to September 30) should minimize any of the potential impacts associated with construction.

Beneficial effects resulting from the proposed restoration project include: (1) High quality floodplain rearing and refuge habitat for listed salmonids will be provided once plantings mature; (2) improvement of riparian vegetation (3.45 acres of degraded buffer will be restored) and creation of wetlands (6.28 acres of degraded wetlands will be enhanced, and 3.38 acres of wetland will be created, in mitigation for 2.43 acres of wetland fill) are expected to reduce water temperatures over time; and (3) construction of stream and wetland mitigation will also increase the flood storage capacity of the site by 33,000 cubic yards. This will moderate flows in downstream reaches and will provide additional mitigation for the proposed impervious surface. These activities will result in a significant net improvement to aquatic habitat on the site.

#### **2.1.5.1 Cumulative Effects**

Cumulative effects are defined in 50 CFR 402.02 as “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” This is step 4 in NOAA Fisheries’ analysis process.

NOAA Fisheries is not aware of any other specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

#### **2.1.6 Conclusion**

The final step in NOAA Fisheries’ approach to determine jeopardy is to determine whether the proposed action is likely to appreciably reduce the likelihood of species survival or recovery in the wild. NOAA Fisheries has determined that, when the effects of the proposed project addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, it is not likely to jeopardize the continued existence of UWR chinook salmon or UWR steelhead. NOAA Fisheries used the best available scientific and commercial data to apply its jeopardy analysis when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NOAA Fisheries believes that the proposed action would cause a short-term increase in turbidity in the project area. If juvenile salmonids are present during construction activities, some direct mortality could result from stranding or from direct contact with construction equipment. The level of direct mortality is expected to be minimal and would not result in jeopardy. In the long term, survival and safe passage conditions for juvenile salmonids will be improved.

These conclusions are based on the following considerations: (1) All in-water work will be completed within the referred in-water work period between June 1 and September 30; (2) very few, if any, juvenile salmonids are expected to be present during the in-water work period; (3) downstream movement of sediment from construction activities is expected to be minimal; (4) areas disturbed by project activities will be mulched and planted with native grasses, shrubs, and trees; (5) floodplain rearing and refuge habitat for juvenile salmonids will be enlarged and enhanced; (6) excavation of the new stream channel will be designed to prevent fish stranding; (7) increased shade resulting from improvement of riparian vegetation is expected to reduce water temperatures in the area over time; and (8) stormwater from the new impervious surfaces will be treated and detained before entering Claggett Creek. The proposed action is not likely to impair properly functioning habitat, appreciably reduce the functioning of already impaired habitat, or retard the long-term progress of impaired habitat toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

### **2.1.7 Conservation Recommendation**

Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of proposed actions on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. NOAA Fisheries has no conservation recommendations at this time.

### **2.1.8 Reinitiation of Consultation**

Reinitiation of consultation is required if: (1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR. 402.16).

## **2.2 Incidental Take Statement**

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental

to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply to implement the reasonable and prudent measures.

### **2.2.1 Amount or Extent of the Take**

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of UWR chinook salmon or UWR steelhead because of detrimental effects from increased sediment levels and stormwater runoff (non-lethal). Any salmonids observed in Claggett Creek during construction will be salvaged. Activities to capture and release salmonids could result in lethal take. Based on the expected low numbers of juvenile salmonids in the action area at the time in-water work is conducted, the potential for take is low.

Effects of actions such as those covered by this Opinion are unquantifiable in the short term and are not expected to be measurable as long-term harm to habitat features or by long-term harm to salmonid behavior or population levels. Therefore, even though NOAA Fisheries expects some low level incidental take to occur due to the proposed action covered by this Opinion, best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate the specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as “unquantifiable”. Based on the information in the biological assessment and other information provided by the COE, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the habitat altering actions covered by the Opinion. The extent of the take includes the aquatic and associated riparian habitats affected by the project.

### **2.2.2 Reasonable and Prudent Measures**

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of listed salmonid species resulting from the action covered in this Opinion. The COE shall include as part of the section 10 River and Harbors Act and section 404 Clean Water Act permits measures that will:

1. Minimize the likelihood of incidental take from activities involving use of heavy equipment, earthwork, or site restoration by directing the contractor to avoid or minimize disturbance to riparian and aquatic systems.
2. Complete a comprehensive monitoring and reporting program to ensure this Opinion is meeting its objective of minimizing the likelihood of take from permitted activities.

3. Minimize the likelihood of take resulting from poor water quality and increased water quantity by treating and detaining stormwater from new impervious surfaces.

### **2.2.3 Terms and Conditions**

To be exempt from the prohibitions of section 9 of the ESA, the COE must require, as part of the section 10 and section 404 permits, that the applicant and/or their contractors comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (avoid or minimize disturbance to riparian and aquatic systems), the COE shall ensure that:
  - a. Project design. The project will be reviewed to ensure that impacts to natural resources have been avoided, minimized and mitigated, and that the following overall project design conditions are met.
    - i. Minimum area. Construction impacts will be confined to the minimum area necessary to complete the project.
    - ii. In-water work. All work which could potentially contribute sediment or toxicants to downstream fish-bearing systems, will be completed within the Oregon Department of Fish and Wildlife (ODFW) approved in-water work period;
    - iii. Work period extensions. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark must be approved in writing by biologists from NOAA Fisheries.
    - iv. Pollution and erosion control plan. A pollution and erosion control plan (PECP) will be developed for the project to prevent point-source pollution related to construction operations. The PECP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations.
      - (1) Methods that will be used to prevent erosion and sedimentation associated with construction sites, equipment and material storage sites, fueling operations and staging areas.
      - (2) Methods that will be used to confine, remove, and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
      - (3) A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
      - (4) A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and clean up measures will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.



- b. Pre-construction activities. Before significant alteration of the action area, the following actions will be accomplished:
  - i. Boundaries of the clearing limits associated with site access and construction are flagged to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
  - ii. The following erosion control materials are onsite.
    - (1) A supply of erosion control materials (*e.g.*, silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.
    - (2) An oil-absorbing, floating boom is available on-site during all phases of construction whenever surface water is present.
  - iii. All temporary erosion controls (*e.g.*, straw bales, silt fences) are in-place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in-place at all times during the contract, and will remain and be maintained until such time that permanent erosion control measures are effective.
- c. Heavy Equipment. Heavy equipment use will be restricted as follows:
  - i. When heavy equipment is required, the applicant will use equipment having the least impact (*e.g.*, minimally-sized, rubber-tired).
  - ii. Heavy equipment will be fueled, maintained and stored as follows.
    - (1) Place vehicle staging, maintenance, refueling, and fuel storage areas a minimum of 150 feet horizontal distance from any stream.
    - (2) All vehicles operated within 150 feet of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.
    - (3) When not in use, vehicles will be stored in the vehicle staging area.
- d. Earthwork. Earthwork, including drilling, blasting, excavation, dredging, filling and compacting, is completed in the following manner:
  - i. All exposed or disturbed areas will be stabilized to prevent erosion.
    - (1) Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by native seeding,<sup>1</sup> mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within seven days of exposure. Non-native sterile seed mix may be used the first year for temporary erosion control.
    - (2) All other areas will be stabilized quickly as reasonable, but within 14 days of exposure.

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<sup>1</sup> By Executive Order 13112 (February 3, 1999), Federal agencies are not authorized to permit, fund or carry out actions that are likely to cause, or promote, the introduction or spread of invasive species. Therefore, only native vegetation that is indigenous to the project vicinity, or the region of the state where the project is located, shall be used.

- (3) Seeding outside of the growing season will not be considered adequate nor permanent stabilization.
  - ii. All erosion control devices will be inspected during construction to ensure that they are working adequately.
    - (1) Erosion control devices will be inspected daily during the rainy season, weekly during the dry season, monthly on inactive sites.
    - (2) If inspection shows that the erosion controls are ineffective, work crews will be mobilized immediately, during working and off-hours, to make repairs, install replacements, or install additional controls as necessary.
    - (3) Erosion control measures will be judged ineffective when turbidity plumes are evident in waters occupied by listed salmonids during any part of the year.
  - iii. If soil erosion and sediment resulting from construction activities is not effectively controlled, the engineer will limit the amount of disturbed area to that which can be adequately controlled.
  - iv. Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug five inches into the ground. Catch basins will be maintained so that no more than six inches of sediment depth accumulates within traps or sumps.
  - v. Sediment-laden water created by construction activity will be filtered before it leaves the right-of-way or enters a stream or other water body. Silt fences or other detention methods will be installed as close as reasonable to culvert outlets to reduce the amount of sediment entering aquatic systems.
- e. Capture and release. Before and intermittently during construction activities in an in-water work area, an attempt must be made to capture and release fish from the isolated area using trapping, seining, electrofishing, or other methods as are prudent to minimize risk of injury.
  - i. A fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish must conduct or supervise the entire capture and release operation.
  - ii. If electrofishing equipment is used to capture fish, the capture team must comply with NOAA Fisheries' electrofishing guidelines.<sup>2</sup>
  - iii. The capture team must handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures to prevent the added stress of out-of-water handling.
  - iv. Captured fish must be released as near as possible to capture sites.
  - v. ESA-listed fish may not be transferred to anyone except NOAA Fisheries personnel, unless otherwise approved in writing by NOAA Fisheries.

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<sup>2</sup> National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (<http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf>).

- vi. Other Federal, state, and local permits necessary to conduct the capture and release activity must be obtained.
  - vii. NOAA Fisheries or its designated representative must be allowed to accompany the capture team during the capture and release activity, and must be allowed to inspect the team's capture and release records and facilities.
  - f. Onsite large woody debris. Any trees which are cut or uprooted on the project site will be placed on site either in the new creek or in the riparian area where they will be recruited during flood events for habitat value.
  - g. Planting. Revegetation at the project sites is completed in the following manner:
    - i. All exposed soil surfaces, including construction access roads and associated staging areas, will be stabilized at finished grade with mulch, native herbaceous seeding, and native woody vegetation.
    - ii. Disturbed areas will be planted with native vegetation specific to the project vicinity or the region of the state where the project is located, and will comprise a diverse assemblage of woody and herbaceous species.
    - iii. Plantings will be arranged randomly within the revegetation area. Approximate placement of trees will be as specified in the plantings plans.
      - (1) If revegetation success has not been achieved after five years, the applicant will submit an alternative plan to the COE. The alternative plan will address temporal loss of function.
      - (2) Plant establishment monitoring will continue and plans will be submitted by the applicant to the COE until site restoration success has been achieved.
    - iv. No herbicide application will occur within 300 feet of any stream channel as part of this permitted action, unless approved in advance by a NOAA Fisheries biologist. Mechanical removal of undesired vegetation and root nodes is permitted.
    - v. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.
2. To implement reasonable and prudent measure #2 (monitoring and reporting), the COE shall ensure that:
- a. Within 30 days of completing the project, the COE will submit a monitoring report to NOAA Fisheries describing the COE's success in meeting these terms and conditions. This report will consist of the following information:
    - i. Project identification.
      - (1) Project name;
      - (2) starting and ending dates of work completed for this project; and
      - (3) the name and address of the construction supervisor.
    - ii. A narrative assessment of the project's effects on natural stream function.
    - iii. Photographic documentation of environmental conditions at the project site before, during and after project completion.

- (1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre- and post-construction.
    - (2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
    - (3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.
  - b. If a dead, injured, or sick endangered or threatened species specimen is found, initial notification must be made to NOAA's National Marine Fishery Service Law Enforcement Office, Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; telephone: 360.418.4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.
  - c. Monitoring reports will be submitted to:

NOAA Fisheries  
Oregon Habitat Branch  
**Attn: 2003/00490**  
525 NE Oregon Street  
Portland, OR 97232
  - d. The City should monitor the weirs in the new channel yearly after high flow events to ensure that they are functioning as designed. If not, the City shall consult with NOAA Fisheries on design changes that may be necessary.
3. To implement reasonable and prudent measure #3 (water quality and quantity), the COE shall ensure that:
- a. The City will adhere to the landscape plan to plant trees and shrubs along both sides of the newly created road as well as throughout the rest of the site.
  - b. The City shall place vegetated bioswales and tree wells in between the parking lanes in any future parking lot associated with the park inside the loop created by the road addition.

### **3. MAGNUSON-STEVENSON ACT**

#### **3.1 Magnuson-Stevens Fishery Conservation and Management Act**

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of EFH: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reason for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

### **3.2 Identification of EFH**

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: Chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

### **3.3 Proposed Action**

The proposed action is detailed above. The action area for this consultation, therefore, includes Claggett Creek in the City of Salem and Keiser, Oregon. This area has been designated as EFH for various life stages of chinook salmon.

### **3.4 Effects of Proposed Action**

As described in detail in the ESA portion of this consultation, the proposed activities would result in detrimental, short-term, adverse effects to a variety of habitat parameters.

### **3.5 Conclusion**

NOAA Fisheries believes that the proposed action will adversely affect the EFH for chinook salmon.

### **3.6 EFH Conservation Recommendations**

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. In addition to conservation measures proposed for the project by the COE, all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2.2 and 2.2.3, respectively, of the ESA portion of this Opinion are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

### **3.7 Statutory Response Requirement**

The MSA (section 305(b)) and 50 CFR 600.920(j) requires the COE to provide a written response to NOAA Fisheries' EFH conservation recommendations within 30 days of its receipt of this letter. The response must include a description of measures proposed to avoid, mitigate,

or offset the adverse impacts of the activity on EFH. If the response is inconsistent with NOAA Fisheries' conservation recommendations, the COE shall explain its reasons for not following the recommendations.

### **3.8 Supplemental Consultation**

The COE must reinitiate EFH consultation with NOAA Fisheries if either the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

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